

**Emergency Transboundary  
Outbreak Pest (ETOP) Situation  
Update for October with a  
Forecast till mid-December, 2015  
avec un résumé en français**

## SUMMARY

The **Desert Locust (SGR<sup>1</sup>)** situation remained calm in the primary outbreak areas and major locust activities were not reported in October.

**Forecast:** Unusually good rains that fell in Sahel West Africa and parts of North Africa will likely create favorable conditions for locusts to concentrate and begin breeding during the forecast period.

The SGR will likely begin developing in the Arabian Peninsula and the southern Red Sea coasts in **Yemen, Oman, and Somalia** where heavy rains fell during the Tropical cyclones Chapala and Megh during November.

## OTHER ETOPS

**Red (Nomadic) Locust (NSE):** NSE populations and swarms persisted in the primary outbreak areas during October and heavy rainfall in Malagarasi Basin triggered breeding. Other outbreak areas did not experience breeding due to

insufficient rainfall during October (IRLCO-CSA).

### **Madagascar Migratory Locust**

**(LMC):** The third and final phase of the three-year locust campaign that began in late August, 2015 continued.

**Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts** in Central Asia and the Caucasus (CAC): Locust activities have ended in CAC and no further developments are expected until spring, 2016.

**African Armyworm (AAW):** AAW activities were not reported during October.

**Quelea quelea (QQU):** QQU birds were reported attacking irrigated rice crops in Busia, Siaya and Nyahururu countries in Kenya and sorghum in Meki in the eastern Rift Valley in **Ethiopia** (IRLCO-CSA).

*OFDA/PSPM is closely monitoring the SGR and other ETOP situation in collaboration with partners at FAO, CLCPRO, CRC, DLCO-EA, IRLCO-CSA, and DPVs/PPDs in frontline countries and will continue providing updates and advise as often as necessary. End summary*

## RÉSUMÉ

**La situation acridienne (SGR)** La situation acridienne (SGR) est restée

<sup>1</sup> Definitions of all acronyms can be found at the end of the report.

calme dans les zones des foyers primaires et les principales activités de criquets ont pas été signalés en Octobre.

**Prévisions:** pluies exceptionnellement bonnes sont tombées dans le Sahel Afrique de l'Ouest et dans certaines parties d'Afrique du Nord vont probablement créer des conditions favorables pour les criquets à se concentrer et commencent à se reproduire au cours de la période de prévision.

Le SGR sera probablement commencer à développer dans la péninsule arabique et les côtes de la mer Rouge au Yémen du sud, Oman et la Somalie où de fortes pluies sont tombées pendant les cyclones tropicaux Chapala et Megh pendant Novembre.

## AUTRES ETOPS

**Rouge (Nomade) Locust (NSE):** populations NSE et des essaims ont persisté dans les zones des foyers primaires en Octobre et de fortes précipitations dans le bassin Malagarasi élevage déclenché. Autres domaines d'éclosion n'a pas connu l'élevage en raison de l'insuffisance des précipitations au cours Octobre (IRLCO-CSA).

**Locust Madagascar migrateurs (LMC):** La troisième et dernière phase

de la campagne de trois ans qui a commencé à la fin Août 2015 a continué.

**Italien (CIT), du Maroc (DMA), Asiatique migrateurs (IMT)** Criquets en Asie centrale et dans le Caucase (CAC):

Activités de criquets ont terminé dans le CAC et pas d'autres développements sont attendus jusqu'au printemps 2016.

**Chenille Légionnaire africaine (AAW):** activités AAW ont pas été signalés au cours de Octobre.

**Quéléa (QQU):** les oiseaux ont été signalés qqu attaquer les cultures irriguées de riz dans les pays Busia, Siaya et Nyahururu au Kenya et le sorgho dans Meki dans la vallée du Rift en Ethiopie orientale (IRLCO-CSA).

*OFDA / PSPM (AELGA) suit de près la SGR et autre situation ETOP en collaboration avec les partenaires de la FAO, la CLCPRO, CRC, DLCO-EA, IRLCO-CSA, et DPV / PPD dans les pays en première ligne et continuera de fournir des mises à jour et de conseiller aussi souvent que nécessaire. Résumé Fin*

*The increased awareness among national authorities and the support from USAID/OFDA and other*

humanitarian/development partners have helped frontline and/or primary invasion countries in Northern Africa and Sahel West Africa, i.e., **Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal** and **Tunisia** to establish autonomous unit for the prevention and control of SGR

### OFDA ETOP Activities and Benefits

With the financial support from USAID/OFDA and other donors FAO established an online Pesticide Stock Management System (PSMS) in more than 50 countries around the globe, including many in the SGR outbreak regions in West and North Africa, the Horn and Eastern Africa and many more. Participating countries are now able to maintain current inventories of their stocks, including usable and obsolete, as well as prevent unnecessary accumulations of useable/obsolete pesticides and empty containers. Thanks to the PSMS, many countries have avoided unnecessary procurements or stockpiling of pesticides. This has minimized costly future disposal operations in a number of countries and contributed to the safety and well-being of their citizens and the shared environment.

OFDA-sponsored tri-state community-based armyworm monitoring, forecasting and early warning (CBAMFEW) project improved knowledge, skills and capacity of rural farmers to monitor and report armyworm presence. The project that aimed at reducing the threats AAW poses

to food security and livelihoods of vulnerable populations through improved farmers' skills, knowledge and perceptions of the AAW was concluded by the end of September.

Participating countries expressed their gratitude and commitments to maintain sustainability of the activities initiated through this project. Through its Plant Health and Pesticide unit, USAID/OFDA will maintain a line of communications with participating countries and keep monitoring progresses and constraints of the activities it supported to initiate.

Thanks to the support from USAID/OFDA and partnering organizations, farmers can now identify and prepare to prevent AAW outbreaks from occurring and stop the caterpillars from causing damage to their crops and pasture.

USAID/OFDA's mapping unit has developed a dynamic map that shows the locations of all trap sites and a lot more - click here [bit.ly/1PAydht](http://bit.ly/1PAydht) to view the web version of the map. The map will be continuously updated with additional useful data layers, including cropping patterns, AAW outbreak frequencies, number of requests for interventions, population load, land use patterns, weather, etc.

OFDA/PSPM is also working with other partners to explore means and ways to expand this innovative technology to benefit other AAW affected countries.

OFDA maintained interests and support for sustainable pesticide risk reduction initiatives through stewardship network (SPRRSN). This initiative is aimed at strengthening capacities of vulnerable communities to help reduce pesticide related risks and improve their safety, protect their assets and the shared environment. To date, OFDA/PSPM has successfully launched two sub-regional SPRRSNs in Eastern Africa and the Horn. The Horn of Africa SPRRSN initiative has created an Association dubbed as Pesticide Stewardship Association-Ethiopia (PSA-E) and PSA-E is considered a model for future similar initiatives across similar regions.

OFDA-PSPM has plans to extend this initiative to other parts of Africa, the Middle East, CAC and other regions. In his recent visit, OFDA Senior Technical Advisor for Pesticides and Pests observed PSA-N activities in Ethiopia and noted progresses and constraints among beneficiaries.

OFDA continued its support for the DRR program to strengthen national and regional capacities for ETOP operations. The program which is implemented through FAO has assisted frontline countries to mitigate, prevent, and respond to ETOP outbreaks. It has also helped participating countries avoid potential emergencies that emanate from misuse and mishandling of pesticides, pesticide-incorporated materials and application platforms.

OFDA supported DRR program for ETOP management in Central Asia and the Caucasus (CAC) is on track. The program promotes collaboration among neighboring countries and encourages coordination of joint monitoring, surveillance, reporting and launching preventive interventions to minimize the threats of ETOPs to food security and livelihoods of millions of vulnerable populations.

**Note:** All ETOP SITREPs can be accessed on USAID/OFDA Pest and Pesticide Management website:

<http://www.usaid.gov/what-we-do/working-crises-and-conflict/responding-times-crisis/how-we-do-it/humanitarian-sectors/agriculture-and-food-security/pest-and-pesticide-monitoring>

### **Detailed information on weather and ecological conditions**

#### **Weather and ecological conditions:**

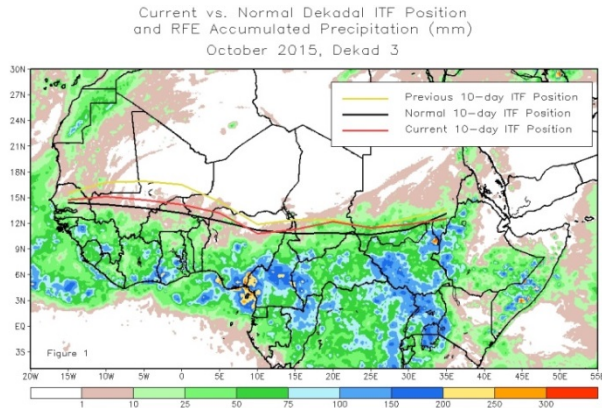
Tropical cyclone (TC) Chapala landed on the southern coast of Yemen on 3 November. The cyclone resulted in extremely heavy rainfall in **Yemen** and **Oman** during the first week of November. Tropical cyclone Megh formed in the Arabian Sea and moved west, passing directly over Socotra Island in the northeastern tip of **Somalia** on 8 November before crossing the Gulf of Aden on 9 November and reaching the southern coast of Yemen at about 00:00 GMT on November 10 and made a landfall about 25 km NE of Aden the same day. By the time it made a landfall, Megh had significantly weakened with wind gusts of



less than 85 km/h. The cyclone continued to decay rapidly as it moved further inland into the rugged and dry southern highlands where it finally dissipated. (Source: OCHA/UNOSAT/UNITAR, JTWC, FAO/DLIS).

Since the Joint Typhoon Warning Centre (JTWC) began keeping records for this region in 1972, a number of tropical cyclones and depressions have made landfall in **Somalia**. Most of these storms arrived from the Indian Ocean while only one arrived from the Gulf of Aden. (Source: Wunderground; JTWC).

During the last dekad of October, the Intertropical Front (ITF) continued moving southward relative to its position from the 2<sup>nd</sup> dekad of October. However, both the western and eastern portions of the ITF experienced anomalous northerly positions compared to their respective long-term mean locations.

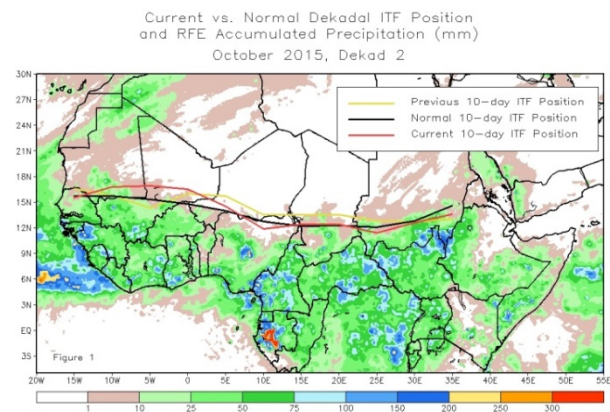


The mean western portion of the ITF was approximated at 13.6N, which was north of the average position by 0.7 degree. Also, the mean eastern portion of the ITF was located at 12.0N, 0.5 degree north of its normal mean position. The anomalous northerly position of the ITF across Africa resulted in wetter than average conditions throughout much of West Africa and Eastern Africa during the period. The above map shows the current

position (--) of the ITF relative to its climatological position (--) during the 3<sup>rd</sup> dekad of October and its previous position during the 2<sup>nd</sup> dekad of October (--) (NOAA, 11/2015).

From October 11-20, 2015, the Intertropical front (ITF) experienced a northward movement over its western portion, while it advanced farther south across its eastern part relative to the former position of the ITF during the previous dekad. The mean western (10W-10E) portion of the ITF was located near 15.3 degrees N, which was to the north of the average position by 0.8 degree. As a result, this anomalous northerly position of the ITF over West Africa has brought above-average rain as far north as south-central Mauritania.

Meanwhile, the mean eastern (20E-35E) portion of the ITF was approximated at 12.5 degrees N and was to the south of the mean position by 0.4 degree. Though, heavy and well above-average rain was observed in southeastern Sudan and northeastern South Sudan.



The map above shows the current position (--) of the ITF relative to its climatological position during the 2<sup>nd</sup> dekad of October (--), and its previous position during the 1<sup>st</sup> dekad of October (--) (NOAA, 10/2015).

In the central outbreak region, medium to heavy rain was reported in Sudan during the 1<sup>st</sup> dekad of October in the winter breeding areas in south Toker Delta, along the central areas and northwest Red Sea hills near neighboring Egypt borders. More rainfall is expected during the coming month.

In the central outbreak region, medium to heavy rain was reported in Sudan during the 1<sup>st</sup> dekad of October in the winter breeding areas in south Toker Delta, along the central areas and northwest Red Sea hills near neighboring Egypt borders. More rainfall is expected during the coming month.

In the western outbreak region good and widespread rains fell in parts of Sahel West Africa, southern northwest Africa causing ecological conditions to become favorable for the locusts to persist and breed during the forecast period.

#### ***El Niño / La Niña and SGR outbreak.***

*The impact of El Niño is often felt strongly in the Central Outbreak Region (COR) (the Horn of Africa and the Arabian Peninsula) due to the above average rainfall during winter and wetter than normal long spring Diraa (April-June) in northern Somalia. On the other hand, the western outbreak area is affected more by La Niña, which often brings heavier than normal rains to the summer breeding areas in the northern Sahel. The eastern outbreak region, i.e., Iran, Pakistan or India is not known to have been affected by El Niño or La Niña.*

*OFDA Hydromet expert and FAO locust unit alerted that one of the strongest El Niño events in the last century is highly likely during the next several months. In*

*the SGR regions, it will cause above-average rainfall over the Horn of Africa, southern Red Sea region and Gulf of Aden from November 2015 on. These events will likely mimic the El Niño of 1997-1998 where DL swarms formed on the northwest coast of Somalia. It is worth mentioning that the 1978, 1993 and 2004 DL upsurges and the 1987-89 plague which affected more than 65 countries in three continents also occurred during El Niño and La Niña years.*

*During the 1987-89 plague, USG, primarily through OFDA, provided close to USD 60 million to a the international campaign that required more than USD 300 million to abate the plague.*

*During the 2003-05 SGR upsurges that affected more than 25 countries across Sahel, North Africa, the Red Sea coasts and the Middle East, OFDA contributed in the upward of USD 21 million, including deploying a DART, to hundreds of thousands of USD that was required to put the locust upsurges under control and assist affected farmers and rural communities(AELGA/OFDA, (AELGA/OFDA, FAO-DLIS)*

In the **NSE** region, medium to low rains were recorded near the outbreak areas in **Tanzania** (149.4 mm during five days) recorded in Kaliua near Malagarasi Basin. Sporadic rainfall was recorded in southern **Malawi** during the first fortnight of October with Ntaja (near Lake Chilwa plains) receiving 30.1 mm during the first week of the month. Warm and hot conditions prevailed in **Zambia** and light rains were reported in a few areas including Kafue Flats during October. Central **Mozambique** experienced hot and dry weather. Short rains started in **Kenya** while light rains fell in some areas in **Zimbabwe** (IRLCO-CSA).

In **CAC**, generally dry and cool weather persisted in October.

**Note:** *Changes in the weather pattern can contribute to ecological shift in ETOP habitats and increase the risk of pest outbreaks, resurgence and even emergence of new pests. Moroccan locust (DMA) which is normally a low to medium altitude pest has shown a considerable vertical habitat expansion by up to 1,000 feet or 300 meters from its normal ambient altitude in **Uzbekistan**.*

*The **Asian migratory locust**, once a univoltin (a single generation per year) insect, recently began exhibiting two generations per year. These anomalous manifestations and phenomena, which are largely attributed to the change in the weather pattern and associated ecological shift, are a serious concern to farmers, rangeland managers, crop protection experts and others. Regular monitoring and documenting anomalous manifestations in pest behavior and habitats and timely reporting remain critical to help avoid and minimize potential damages to crops, pasture and subsequent negative impact on livelihoods of vulnerable communities and populations. **End note.***

### Detailed Accounts of ETOP Situation and a Forecast for the Next Six Weeks

**SGR – Western Outbreak Region:** The SGR situation remained relatively calm in October in western and northern outbreak. In **Chad** a few isolated solitary individuals were observed North and

southwest of Kalait, West of Guereda, Southeast of Beurkia, and northeast of Salal where surveys were conducted during the first dekad of the month.

In **Mauritania**, several solitary-transient 3<sup>rd</sup> and 4<sup>th</sup> instar hopper bands and patches were reported in the northeast south of Nouakchott from Adrar to Wadi El Gourariya and north of Zgueimir at Dhlou Tleiha. Hoppers were also observed on Tribulus sp. northwest of Agane, Rahalia, Nouakel, Inchiri and the surroundings of Akjoujt. Yellow mature adults were detected between El Gourariya and northwest Targa and Rahhaliyah. The presence of hopper bands and patches in the Centre of the country and yellow mature adults in several locations suggests that breeding has begun in several areas in the northwest of Targa, Inchiri, Amessaga, Taziast and Tijiritt.

Control operations commenced on November 2<sup>nd</sup> and a team from Inchiri was deployed to El Gourariya to carry out control operations using knapsack sprayers. Additional teams are being deployed and further monitoring and assessments will be launched in several areas, including Inchiri, Akchar, Tijiritt, Taziast, Adhims, Aftout, Yaghref and Amessaga. Locust information and related data will be solicited from all sources including nomads and merchants that traverse the Sahara (CNLA/Chad, CNLCP/Mali, CNLA/ Mauritania, CNLAA/Morocco, CNLA/Niger, CNLA/Tunisia, NCDLC/Libya).

**Forecast:** Given the presence of favorable ecological conditions from good

rains that fell in Tiris-Zemmour in northern Mauritania, western Algeria as well as southern and southwestern Morocco, SGR will likely breed and persist during the forecast period. The primary outbreak areas in **Chad, Mali and Niger** will also experience localized small-scale breeding during the forecast period (OFDA/AELGA, FAO-ECLO).

**SGR (Desert Locust):** Central Outbreak Region: In **Sudan**, no locust were detected during ground surveys in the 3<sup>rd</sup> dekad of October in the summer breeding areas in River Nile, the Northern, North Kordofan, Khartoum, White Nile as well as Kassala States. No locusts were reported in Eritrea, Ethiopia, Oman, Somalia, S. Arabia or Yemen during October (DLCO-EA, FAO-DLIS, LCC/Oman, PPD/Sudan).

**Forecast:** LSGR activities will likely begin in on the coastal and the interior areas in southern Yemen where TC Chapala and Megh brought heavy rains. A similar situation is likely in northeastern Somalia and parts of Oman where heavy rains occurred as a result of the two cyclones that hit the region during the first dekad of November. Sudan will likely experience locust activities during the coming months (DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Sudan).

**SGR - Eastern Outbreak Region:** No locusts were reported in Rajasthan, India and only a few scattered adults were detected in **Pakistan** along the Indo-Pakistan borders during surveys carried out in October.

**Forecast:** Ecological conditions have begun improving for locusts to persist and perhaps breed on a small-scale in

these areas, but major SGR activities are not expected during the forecast period (FAO-DLIS, OFDA/AELGA).

**Red (Nomadic) Locust (NSE):**

Significant populations of NSE persisted in most outbreak areas. Low to medium density swarms infested Kafue Flats in **Zambia** and Ikuu-Katavi and Malagarasi Basins, North Rukwa and Wembere plains in **Tanzania**. The Lake Chilwa/Lake Chuita plains in **Malawi** and **Mozambique** remained relatively calm and only localized concentrations of adult locusts continued to develop on unburnt patches. Low density adult populations continued to infest the Buzi-Gorongosa and Dimba plains in **Mozambique**. Insufficient moisture failed to trigger breeding except in Malagarasi Basin during October (IRLCO-CSA).

**Forecast:** NSE annual breeding cycle will commence and egg laying will occur during November/December Ikuu-Katavi and North Rukwa plains in Tanzania, Lake Chilwa/Lake Chiuta plains (Malawi and Mozambique) and Kafue Flats in Zambia where medium to high density adult populations were present. Buzi-Gorongosa and Dimba plains in Mozambique will see high density hopper developments. Survey to assess population levels must be conducted soon after hatching to plan control operations.

**Madagascar Migratory Locust (LMC):**

The 3<sup>rd</sup> phase of the three-phase locust campaign that commenced on August 26, 2015 continued.

**Forecast:** Locusts will likely continue appearing in a few places during the



forecast period. Given the need for surveying and perhaps controlling areas too large for ground operations to cover, the ground team will be augmented by a helicopter to support aerial operations

**Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC):** The locust seasonal has ended in CAC region.

**Forecast:** Locust activities are not expected till spring 2016 (OFDA/AELGA).

*Italian, Migratory and Moroccan locusts are a constant threat to the CAC region. These pests can profusely multiply and attack tens of millions of hectares of crop land, pasture land and affect livelihoods of more than 20 million vulnerable rural inhabitants that eke a living primarily from farming and herding. With the ability to travel more than 100 km (60 miles) each day, these locusts can decimate dozens of hectares of cereal crops, pasture, cotton, fruit trees, leguminous plants, sunflower, tobacco, vineyard, vegetable and others over vast areas. Most of the countries affected by these three locust species are relatively new and lack the capacity to effectively prevent and control these pests (The once robust centralized pest control capacity in these countries disappeared with the downfall of the Soviet system leaving each country to fetch for itself).*

*Currently, USAID/OFDA is sponsoring project activities through the UN/FAO to help strengthen/re-build national and regional capacity to prevent and control the threats these pests pose to the vulnerable 20 plus million people in these*

*regions (for further detail, refer to page 5 above).*

**Timor and South Pacific:** No update was received from East Timor during October, but ETOP activities may have started appearing during this time.

**African Armyworm (AAW):** AAW activities were absent in all outbreak areas in October.

**Forecast:** The Armyworm outbreak season may occur in areas where rains have already commenced, particularly in Tanzania and Kenya.

AAW season will commence at the foot hills of the seasonal rain in the IRLCO-CSA member-countries at the foot hills of the seasonal rain due to start from late October into November. All trap operators and forecasters are advised to replenish pheromone traps for timely monitoring (IRLCO-CSA, OFDA/AELGA).

**Quelea (QQU):** QQU birds were reported attacking irrigated rice crops in Busia, Siaya and Nyahururu countries in Kenya and sorghum in Meki in the eastern Rift Valley in **Ethiopia** (DLCO-EA, IRLCO-CSA).

**Forecast:** QQU bird outbreaks are expected to occur in Kenya, but other counties will likely remain free of outbreaks during the forecast period (IRLCO-CSA, OFDA/AELGA).

*Facts: QQU birds can travel ~ 100 km/day looking for food. An adult QQU bird can consume 3-5 grams of grain and destroy the same amount each day. A medium*

*density QQU colony can contain up to a million or more birds which are capable of consuming and destroying 6,000 to 10,000 kg of seeds/day, enough to feed 12,000-20,000 people/day.*

**Rodents:** No update was received on rodents for October, however, this pest is a constant threat to crops and produce and always requires active surveillance and preventive interventions to avoid any major threats (OFDA/AELGA).

*Front-line countries must remain regular monitoring. Invasion countries should stay alert. DLCO-EA, DLCCs, IRLCO-CSA, national PPDs, CNLAs, DPVs, ELOs, etc., are encouraged to continue sharing ETOP information with stakeholders as often and as early as possible. Lead farmers and community forecasters must remain vigilant and report ETOP detections to relevant authorities immediately.*

### **Inventories of Pesticide Stocks for ETOP Prevention and Control**

Pesticide inventories remained unchanged during October as control operations were not conducted.

**Note:** Countries with SGR invasions, particularly in West and North West Africa reported the presence of obsolete pesticide stocks some of which are leftovers from the previous locust campaigns, including that of 2003-05 campaign. Safe disposal of these stocks will require considerable financial and technical resources. **End note.**

OFDA/AELGA encourages countries to continue exploring alternatives such as IPM to minimize and reduce risks

associated with pesticide stockpiling. A judiciously executed triangulation of surplus usable stocks from countries with large inventories to countries where they are much needed is a win-win situation worth considering.

**Note:** *A Sustainable Pesticide Stewardship (SPS) can considerably strengthen the pesticide delivery system (PDS) at the national and regional levels. A strong PDS can effectively reduce pesticide related human health risks, minimize environmental pollution, increase food security and ultimately contribute to the national economy. An SPS can be effectively established by linking key stakeholders across political borders. **End note.***

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Table 1. ETOP Pesticide Inventory in Frontline Countries

Country	Quantity (l/kg) <sup>§</sup>
Algeria	1,190,000~ <sup>D</sup>
Chad	44,500
Eritrea	-16,897~
Ethiopia	-3,975~
Libya	25,000~
Madagascar	206,000~
Mali	32,000 <sup>D</sup>
Mauritania	43,400~
Morocco	3,757,000~ <sup>D</sup>
Niger	75,800~
Oman	14,440~
Senegal	156,000~ <sup>D</sup>
Sudan	632,718~
Tunisia	77,530~ (68,514 obsolete)
Yemen	22,000@ + 300 kg GM~

<sup>§</sup>Includes different kinds of pesticide and formulations - ULV, EC and dust; ~ data not current; <sup>D</sup> = Algeria and Morocco 225,000 l of pesticides to Madagascar in 2013; Mali donated 21,000 l to Malawi, Mozambique and Tanzania in 2012 and FAO facilitated the triangulation; Mauritania donated 25,000 l to Libya in 2012 and to 30,000 l to Madagascar in 2013; GM = *GreenMuscle*<sup>TM</sup> (fungal-based biological pesticide); @includes donations from Saudi Arabia

## LIST OF ACRONYMS

AAW *African armyworm (Spodoptera expempta)*  
 AELGA *Assistance for Emergency Locust Grasshopper Abatement*  
 AFCS *Armyworm Forecasting and Control Services, Tanzania*  
 AfDB *African Development Bank*  
 AME *Anacridium melanorhodon*  
 APLC *Australian Plague Locust Commission*  
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*Bands groups of hoppers marching pretty much in the same direction*  
 CAC *Central Asia and the Caucasus*  
 CBAMFEW *Community-based armyworm monitoring, forecasting and early warning*  
 CERF *Central Emergency Response Fund*  
 CIT *Calliptamus italicus*  
 CLCPRO *Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)*  
 CNLA(A) *Centre National de Lutte Antiacridienne (National Locust Control Center)*  
 CRC *Commission for Controlling Desert Locust in the Central Region*  
 CTE *Chortoicetes terminifera*  
 DDLC *Department of Desert Locust Control*  
 DLCO-EA *Desert Locust Control Organization for Eastern Africa*  
 DMA *Dociostaurus maroccanus*  
 DPPOS *Department of Plant Protection and Quarantine Services*  
 DPV *Département Protection des Végétaux (Department of Plant Protection)*  
 ELO *EMPRES Liaison Officers*  
 EMPRES *Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases*  
 ETOP *Emergency Transboundary Outbreak Pest*  
 Fledgling *immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs to breed*  
 GM *GreenMuscle<sup>®</sup> (a fungal-based biopesticide)*  
 ha *hectare (= 10,000 sq. meters, about 2.471 acres)*  
 IRIN *Integrated Regional Information Networks*

IRLCO-CSA *International Red Locust Control Organization for Central and Southern Africa*

ITCZ *Inter-Tropical Convergence Zone*

ITF *Inter-Tropical Convergence Front = ITCZ)*

FAO-DLIS *Food and Agriculture Organizations' Desert Locust Information Service*

Hoppers *young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)*

Kg *Kilogram (~2.2 pound)*

L *Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)*

LMC *Locusta migratoriacapito*

LMM *Locusta migratoria migratorioides (African Migratory Locust)*

LPA *Locustana pardalina*

MoAFSC *Ministry of Agriculture, Food Security and Cooperatives*

MoARD *Ministry of Agriculture and Rural Development*

NCDLC *National Desert Locust Control, Libya*

NOAA (US) *National Oceanic and Aeronautic Administration*

NSD *Republic of North Sudan*

NSE *Nomadacris septemfasciata*

OFDA *Office of U.S. Foreign Disaster Assistance*

PHD *Plant Health Directorate*

PHS *Plant Health Services, MoA Tanzania*

PPD *Plant Protection Department*

PPSD *Plant Protection Services Division/Department*

PRRSN *Pesticide Risk Reduction through Stewardship Network*

QU *Quelea bird*

SARCOF *Southern Africa Region Climate Outlook Forum*

SGR *Schistoseca gregaria*

SWAC *South West Asia DL Commission*

PSPM *Preparation, Strategic Planning and Mitigation (formerly known as the Technical Assistance Group - TAG)*

Triangulation *The process whereby pesticides are donated by a country, with large inventories, but often no immediate need, to a country with immediate need with the help of a third party in the negotiation and shipments, etc. Usually FAO plays the third party role in the case of locust and other emergency cases.*

USAID *the United States Agency for International Development*

UN *the United Nations*

ZEL *Zonocerus elegans, the elegant grasshopper*

ZVA *Zonocerus variegatus, the variegated grasshopper (This insect is emerging as a fairly new distractive dry season pest, largely due to the destruction of its natural habitat through deforestation, land clearing, for agricultural and other development efforts and from associated weather variability.)*

### **Who to Contact:**

Should you have any questions, comments or suggestions or know someone who would like to freely subscribe to this report, please, feel free to contact us:

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